

#ProjectPhenomena Resource

# Our mystery plant survives four weeks with no soil and no water!

First Grade



Image source: Debra Jenkins

Driving Question(s)	Crosscutting Concept(s)
How was our mystery plant able to use their external parts to help them survive without soil or water for four weeks?	<b>Structure and Function</b> <ul style="list-style-type: none"> <li>The shape and stability of structures of natural and designed objects are related to their function(s).</li> </ul>
Ideal Student Explanation	Disciplinary Core Idea(s)
<p>Our mystery plant is a special kind of plant called a succulent. It was able to survive without dirt or water by using its structures to stay alive. Plants need water to stay alive. Most plants have roots that go into the ground to absorb water and leaves to make food from the sun.</p> <p>Our mystery plant grew tiny, hair roots that looked like hairs and stayed above the ground that helped it get water out of the air. It also was able to use its special thick leaves as a way to store water to use later.</p> <p>This is why succulents like our mystery plant can live in dry places like the desert.</p>	<b>LS1A. Structure and Function</b> <ul style="list-style-type: none"> <li>All organisms have external parts. Different animals use their body parts in different ways to see, hear, grasp objects, protect themselves, move from place to place, and seek, find, and take in food, water and air. Plants also have different parts (roots, stems, leaves, flowers, fruits) that help them survive and grow.</li> </ul>

Lesson(s)	Focus Science and Engineering Practice(s)
<p><a href="#">Lesson 1.1 What is it like where you live?</a> introduces the students to a succulent cuttings that have been placed outside and allowed to remain for four or more weeks. To link the CA EP&amp;C Principle 1 - People Depend on Natural Systems, the concepts of weather and climate are introduced to the students. ELA and Math standards are incorporated into the lesson. Students examine where they live and how local plants are affected by lack of rain. Students compare the local plants to the mystery plant and try to explain how it survived.</p> <p><a href="#">Lesson 1.2 Different plants look different</a> has students examine unique plants and research characteristics of different plants to try to explain how the mystery plant survived.</p>	<p><b>Ask Questions and Identify Problems</b></p> <ul style="list-style-type: none"> <li>Ask questions based on observations to find more information about the natural and/or designed world(s)</li> </ul> <p><b>Analyze and Interpret Data</b></p> <ul style="list-style-type: none"> <li>Use observations to describe patterns and/or relationships in the natural world in order to answer scientific questions.</li> </ul>
<b>Associated Performance Expectations</b>	
<p><b>1-LS1-1.</b> Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.</p>	
<b>Connections</b>	
<p><b>CA EP&amp;C Principle 1</b> The continuation and health of individual human lives and of human communities and societies depend on the health of the natural systems that provide essential goods and ecosystems services.</p> <p><b>Any Other Connections Identified</b> CCSS.ELA-Literacy.RL.1.3 CCSS.Math - 1.OA.A1</p>	
<b>Teacher Resources to Learn More</b>	
<ul style="list-style-type: none"> <li>Succulent Science Daily article <a href="https://www.sciencedaily.com/releases/2017/11/171116132714.htm">https://www.sciencedaily.com/releases/2017/11/171116132714.htm</a></li> <li>Nature Articles about plants <a href="https://www.nature.com/subjects/plant-sciences">https://www.nature.com/subjects/plant-sciences</a></li> </ul>	

- <https://drive.google.com/open?id=1QPgFFOE8FoZFqm6RLIVar-HIz4Ta9Hv9O7XcooG-2IQ>
- <https://drive.google.com/open?id=1RFoSbIn3BMAAaOOPAlCy0tQNGA-1YTp6aA3JfHCsLbY>